

# Language Choices for Deaf Infants: Advice for Parents Regarding Sign Languages

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The principle of respect for autonomy in modern medical ethics<sup>1</sup> leads doctors to avoid persuasion and aim for neutrality when discussing language choices regarding deaf infants. However, at times persuasion to overcome biases is necessary and ethically mandatory.<sup>2</sup>

Many parents and health professionals have faith in the ability of cochlear implants (CIs) to allow deaf children to “hear” and achieve normal language and speech development. While it is good to encourage parents’ hope for their children’s future, to avoid bias, medical professionals must acknowledge the reality that CIs do not replace normal hearing. As of 2006, 80% of deaf infants in Northern Europe were receiving CIs,<sup>3</sup> and as of December 2010, roughly 40% worldwide.<sup>4</sup> Parents need to know that CI may not guarantee their child’s language acquisition. While a CI is usually given only to a child who will not benefit from a hearing aid, it is important to recognize that CIs are not “super hearing aids”; even hospitals that perform CI surgery make statements such as: “For most patients, a cochlear implant will not work as well as a hearing aid”<sup>5</sup> and studies support that statement.<sup>6</sup> That’s because a hearing aid (HA) simply amplifies sound, whereas with CIs sound is transformed into electrical impulses delivered directly to the cochlear nerve. The CI-child must undergo long-term extensive training to interpret those electrical impulses.<sup>7</sup> Unpredictable individual variation in outcomes is pervasive even with great effort and dedication from caregivers and the deaf child<sup>8</sup>; some deaf children receive little to no auditory benefit from CIs in acquiring language.<sup>9</sup>

The neuronal plasticity of the brain with respect to language acquisition is maximal before the age of 3 years<sup>10</sup>; if a child is not fluent in a language by the age of 5 years, that child may never achieve full fluency in any language.<sup>11</sup> At the same time during this critical period, the increase in synaptic density occurs earlier and more rapidly in the occipital cortex than in the auditory<sup>12</sup>; so the deaf infant’s brain is primed for visual input. Sign languages provide this visual input; access to signing can ensure language acquisition for deaf children and avoid cognitive deficits associated with linguistic deprivation.<sup>13-16</sup> The deaf child

who signs well does better academically than the deaf child who doesn’t, regardless of all other factors,<sup>17</sup> and most attribute this to the fact that the signing deaf child is not at a linguistic disadvantage. Given evidence such as this, a recent panel of specialists concluded that all children born deaf should be taught a sign language immediately.<sup>18</sup>

We are a team of specialists in education studies, linguistics, pediatric medicine, and developmental psychology; our work focuses on deaf individuals. In order to help the practicing pediatrician, we offer here responses to common family questions. Our responses respect families’ autonomy while bearing in mind the difficulty that many parents have coming to terms with children who are different. The evidence-based information related to deaf children’s language and speech development here should help enable parents to better be involved in making the relevant decisions.<sup>19,20</sup> Our intention is for the advice below to go directly to parents or indirectly via those involved in the educating of deaf children.

## What Will Give My Child the Best Chances of Learning to Talk?

The starting point is acquiring a language, not speech per se. Languages can be spoken or signed, and both modalities are “equal citizens” in a cognitive sense<sup>21</sup>; that is, they fully support all human communicative needs in daily interactions and academic endeavors. A child must understand what language communication is about

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before a child can communicate with language in either modality. As a child participates in accessible language communication, the child begins to understand and use language in sign and/or speech. Sign languages are accessible to all deaf children while spoken languages may be fully accessible only to some, via HA or CI.

Introducing 2 languages does not interfere with acquisition of either,<sup>22-26</sup> whether spoken or signed.<sup>27</sup>

To the contrary, many studies show signing aids development of spoken language and reading skills in the CI-child.<sup>28-31</sup> In a study of CI-children who had been learning to sign since birth, they performed in English on par with hearing peers.<sup>32</sup> CI-children exposed to sign and speech tend to show rapid learning in both.<sup>33</sup> CI-children with deaf parents often outperform CI-children with hearing parents on spoken language skills, presumably because of sign competence.<sup>34</sup> Children aged 4 to 7 years implanted at age 12 to 24 months and educated through oral-aural combined with signing are capable of achieving “age appropriate language levels on expressive vocabulary and receptive syntax.”<sup>35(p1274)</sup> Signing deaf children use their phonological awareness skills in signing to help them read a spoken language.<sup>36</sup>

### **How Can I Teach My Child Signing if I Don't Sign Myself?**

Immigrant children who go to school with peers speaking the surrounding language become fluent and speak like their peers and the native speakers outside their home. In particular, while their parents usually continue to use language that is recognizably nonnative, the children do not replicate their parents' language use; they replicate the language use of native speakers. So parents do not have to be perfect language models or even very good language models. What matters is that the child be exposed to good language models frequently and regularly, and models outside the home can serve that function very well.

However, even if not fluent, the parents' language use is still important to the language development of the child. Children need to interact directly through language with their family members in order to develop healthy relationships with those members; the alternative leads to feelings of isolation and frustration. When a hearing mother signs with her deaf child, the child shows early language expressiveness on a par with hearing peers<sup>37</sup> regardless of her signing abilities. And deaf children who have good family relationships have a better chance of developing healthy psychosocial identities.<sup>38</sup>

In sum, when deaf children are placed into environments with good sign language models, they learn to sign fluently, even if their family does not.<sup>39</sup> Most cities have deaf and hearing communication centers that offer

sign language classes for families and that can help families make ties with deaf community members. (A list of useful websites is offered at the end of this article.)

### **Won't There Be Less Family Disruption and Less Work if I Raise My Child Strictly Orally?**

The presence of a deaf child changes family dynamics regardless of language(s) used.

If your child has HA or CI, it might be possible for him or her to become linguistically competent and happy using speech only. The training necessary for having a chance at speech competence requires daily commitment of time and effort on the part of all those involved in raising and educating the child. But, importantly, it also requires enormous persistence on the part of the deaf child. If oral language skills enable the child to communicate with hearing strangers, these skills might open up additional social and professional opportunities, to be sure. However, there is no assurance that any of this will happen, no matter how much time and effort are devoted to training. And if it doesn't happen, not only will the child have wasted great amounts of time that could have been spent in play (important to learning) and more fruitful activities, but the child may well experience a sense of failure.

On the other hand, sign language skills ensure the child's cognitive health and avoid family frustration.<sup>40</sup> Furthermore, the deaf child will have a language in which to be comfortable, where the child can acquire knowledge, catch jokes, and appreciate nuances of language necessary to socialize, relax, and be eloquent. Learning a sign language will definitely require time and effort of the family, but for the deaf child it is a natural process that does not require extra effort.

### **Won't Signing Adversely Affect My Child's Academic Achievements? After All, Bilingualism Is Confusing**

Knowing a sign language does not impede a deaf child's academic achievements. In fact, good signing skills promote the acquisition of literacy, both reading and writing, as study after study has shown.<sup>41-49</sup> It's actually simple: A child needs a solid foundation in a first language in order to understand what literacy is all about, and a sign language is the best way to give a deaf child that foundation.<sup>50</sup>

So deaf children need to be raised bilingually—in both their local sign language and the ambient spoken language, at least the written form of it. Bilingualism might be considered a luxury for hearing children in

some places, but bilingualism is necessary for a deaf child, to ensure intact language capabilities and social-cultural development.

Parents can rest assured that bilingualism will not harm their children, but, instead, bestow “the bilingual advantage.”<sup>51</sup> The bilingual brain is quick, focused, and flexible. Bilinguals are “mental jugglers” with enhanced executive function.<sup>52</sup> Frequent juggling between languages increases cognitive benefit—and this goes for bimodal bilinguals too<sup>53</sup>—whether one is a “balanced bilingual” or not, although the more nearly balanced one is, the more benefit for spontaneous cognitive flexibility.<sup>54</sup> Bilinguals show enhanced sensitivity to language distinctions,<sup>55</sup> which is an advantage in language processing.<sup>56</sup> Bilingualism retards the onset of dementia.<sup>57</sup> Being raised bilingual improves language functioning and higher level cognitive skills in children with language impairments.<sup>58</sup>

### Can't We Wait to See if Our Child Succeeds with a CI Before Working to Learn to Sign?

The earlier children are exposed to a language, the greater guarantee of fluency. Infants with an intact auditory system differentiate sounds of the surrounding language from sounds of unfamiliar languages,<sup>59</sup> and a child's ability to distinguish between articulations (auditory or manual) of her surrounding language in the first year of life predicts language abilities in the second and third years of life.<sup>60</sup> Early intervention services delivered before 6 months of age result in better receptive and expressive language.<sup>61</sup> If the CI does not provide the deaf child this critical early language access, as it often does not, waiting to introduce signing runs the risk that she might miss the window for language fluency.

### But Won't I Lose My Child to Deaf Culture?

Parents who sign are not more likely to “lose” their children. In fact, logically, parents who sign strengthen the bond with their deaf child. Children who associate with other deaf people are not lost to their hearing families. Deaf children's experience will always be different from their hearing parents, but they will also share much with them if the family signs. Acceptance and love build strong family bonds, not whether someone speaks or signs. Having a strong sense of self supported by others with the same experience gives deaf children, just like hearing children, a sense of purpose and happiness, important for future success.<sup>62</sup>

## Useful Websites

For families:

<http://handsandvoices.org/>  
<http://www.babyhearing.org/index.asp>  
<http://idea.ed.gov/>  
<http://www.wfdeaf.org/>  
<http://raisingandeducatingdeafchildren.org/the-earliest-interventions-when-parents-discover-they-have-a-deaf-child>  
<http://www.deafinx.com/resources/resources-for-parents-with-deaf-and-hard-of-hearing-children.html>

For both families and professionals:

<http://www.nidcd.nih.gov/>  
<http://www.asha.org/>  
<http://www.gallaudet.edu/documents/clerc/ei.pdf>  
 (This is an article: Early Beginnings for Deaf and Hard of Hearing Children: Guidelines for Effective Services)  
<http://www.infantheating.org/>

For introduction to sign:

<http://www.lifeprint.com/>  
<http://www.aslpro.com/>  
<http://www.handspeak.com/>  
<http://www.funbrain.com/signs/index.html>  
<http://www.asl.ms/>  
<https://www.signingsavvy.com/>

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All authors substantially contributed to the concept and design of this article, helped in drafting and revising it, and approved this final version for publication.

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